

THIRD CLASS

T NELSON SYS CONS 42987  
BOX 1546  
POUGHKEEPSIE NY 12601  
01  
\*\*\*\*

Bulk Rate  
U. S. Postage Paid  
Boston, Mass.  
Permit No. 59690

# Hardbound Books at Paperback Prices!



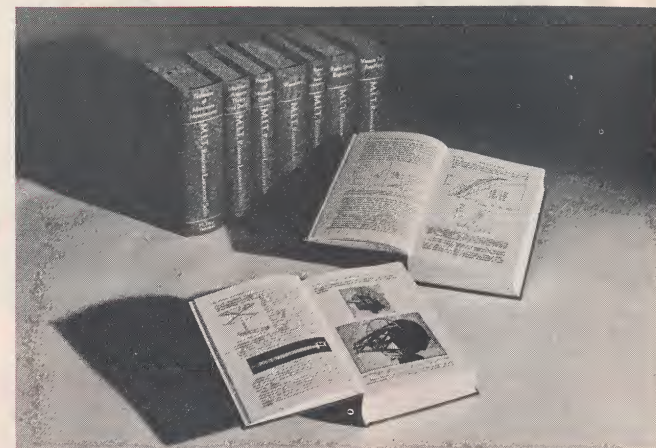
BOSTON TECHNICAL PUBLISHERS, INC.

Central Sq., Cambridge, Mass. 02139

Phone 617 492-7600

**All Books Only \$3.95 Each**

Enjoy our free 30-day examination privilege  
to select books for your reference library



## M. I. T. RADIATION LABORATORY SERIES

Vol.		Pages	Original
1.	<b>Radar System Engineering</b> — Ridenour	748	\$12.50
2.	<b>Radar Aids to Navigation</b> — Hall	389	\$10.00
3.	<b>Radar Beacons</b> — Roberts	489	\$ 9.50
4.	<b>Loran</b> — Pierce, McKenzie, and Woodward	476	\$10.00
5.	<b>Pulse Generators</b> — Glasoe and Lebacqz	761	\$12.50
6.	<b>Microwave Magnetrons</b> — Collins	806	\$13.50
7.	<b>Klystrons and Microwave Triodes</b> — Hamilton, Knipp, and Kuper	553	\$11.00
8.	<b>Principles of Microwave Circuits</b> — Montgomery, Dicke, and Purcell	486	\$10.00
9.	<b>Microwave Transmission Circuits</b> — Ragan	725	\$12.00
10.	<b>Waveguide Handbook</b> — Marcuvitz	428	\$11.00
11.	<b>Technique of Microwave Measurements</b> — Montgomery	939	\$14.50
12.	<b>Microwave Antenna Theory and Design</b> — Silver	623	\$12.50
13.	<b>Propagation of Short Radio Waves</b> — Kerr	728	\$13.00
14.	<b>Microwave Duplexers</b> — Smullin and Montgomery	437	\$ 9.50
15.	<b>Crystal Rectifiers</b> — Torrey and Whitmer	443	\$ 8.50

Vol.		Pages	Original
16.	<b>Microwave Mixers</b> — Pound	381	\$ 8.75
17.	<b>Components Handbook</b> — Blackburn	626	\$11.50
18.	<b>Vacuum Tube Amplifiers</b> — Valley and Wallman	743	\$13.50
19.	<b>Waveforms</b> — Chance, Hughes, MacNichol, Sayre, and Williams	785	\$13.50
20.	<b>Electronic Time Measurements</b> — Chance, Hulsizer, MacNichol, and Williams	538	\$11.00
21.	<b>Electronic Instruments</b> — Greenwood, Holdam, and MacRae	721	\$13.50
22.	<b>Cathode Ray Tube Displays</b> — Soller, Starr, and Valley	746	\$13.50
23.	<b>Microwave Receivers</b> — Van Voorhis	618	\$11.50
24.	<b>Threshold Signals</b> — Lawson and Uhlenbeck	388	\$ 9.50
25.	<b>Theory of Servomechanisms</b> — James, Nichols, and Phillips	375	\$ 9.50
26.	<b>Radar Scanners and Radomes</b> — Cady, Karelitz, and Turner	491	\$10.00
27.	<b>Computing Mechanisms and Linkages</b> — Svoboda	359	\$ 8.50
28.	<b>Index</b> — Henney	160	\$ 4.50

## OTHER WIDELY USED REFERENCES

**AIRBORNE RADAR** By D. J. Povejsil and R. S. Raven, Westinghouse Electric Corp. Weapons Systems Development; P. Waterman, Head, Equipment Research, U.S. Naval Research Laboratory.  
Catalog No. AS02 832 Pp. Illus. Orig. \$20.00

**LOW-TEMPERATURE REFRIGERATION FOR MICROWAVE SYSTEMS** Proceedings of a Technical Colloquium, April 28-29, 1966, Frankfurt, W. Germany. ARTHUR D. LITTLE, INC., Cambridge, Mass.  
Catalog No. FM11 314 Pp. Illus. Orig. \$19.50



**BEAM AND WAVE ELECTRONICS IN MICROWAVE TUBES** By Rudolf G. E. Hutter, Ph.D., Brooklyn Polytechnic Institute.

Catalog No. EM01 ..... 378 Pp. Illus. .... Orig. \$10.75

**MEASUREMENTS AT CENTIMETER WAVELENGTH** By Donald D. King, Ph.D., Director of the Electronics Research Laboratory at Aerospace Corporation, Los Angeles, Calif.

Catalog No. EM02 ..... 327 Pp. Illus. .... Orig. \$7.50

**TRANSIENT CIRCUIT ANALYSIS** By Y. H. Ku, Ph.D., Professor of Electrical Engineering, The Moore School of Electrical Engineering, University of Pennsylvania.

Catalog No. EM03 ..... 441 Pp. Illus. .... Orig. \$13.00

**FOUNDATIONS OF ELECTRODYNAMICS** By Parry Moon., Ph.D., Professor of Electrical Engineering, M.I.T., and Domina E. Spencer, Ph.D., Assoc. Professor of Mathematics, Univ. of Connecticut.

Catalog No. EM04 ..... 314 Pp. Illus. .... Orig. \$9.75

**CONTROL ENGINEERING** By Gordon J. Murphy, Ph.D., Professor of Electrical Engineering, Northwestern University.

Catalog No. EM05 ..... 385 Pp. Illus. .... Orig. \$7.50

**TRANSIENT AND STEADY-STATE ANALYSIS OF ELECTRIC NETWORKS** By Edward Peskin, D.E.E., Professor of Electrical Engineering, Stevens Institute of Technology.

Catalog No. EM06 ..... 423 Pp. Illus. .... Orig. \$13.00

**FUNCTIONAL CIRCUITS AND OSCILLATORS** By Herbert J. Reich, Ph.D., Professor of Electrical Engineering, Yale University.

Catalog No. EM07 ..... 466 Pp. Illus. .... Orig. \$12.50

**FUNDAMENTALS OF RADIO COMMUNICATIONS** By Abraham Sheingold, Professor of Physics, U.S. Naval Post Graduate School.

Catalog No. EM09 ..... 442 Pp. Illus. .... Orig. \$7.95

**ULTRA HIGH FREQUENCY PROPAGATION** By H. R. Reed, Ph.D., Professor of Electrical Engineering, University of Maryland, and Consultant U.S. Naval Air Test Center; C. M. Russell, Chief of Traffic Control Research, Systems R & D Service.

Catalog No. EM12 ..... 562 Pp. Illus. .... Orig. \$11.50

**METALLURGY OF SEMICONDUCTORS** By Yu. M. Shashkov. Authorized Translation from the Russian by J. E. S. Bradley, B. Sc., Ph.D.

Catalog No. EM14 ..... 183 Pp. Illus. .... Orig. \$9.50

**MICROELECTRONIC TECHNOLOGY** By Samuel L. Marshall, Editor, Semiconductor Products & Solid State Technology.

Catalog No. EM18 ..... 240 Pp. Illus. .... Orig. \$13.50

**FUNDAMENTALS OF DIGITAL MACHINE COMPUTING** By Guenther Hintze, Director, Computer Directorate, White Sands Missile Range.

Catalog No. EM25 ..... 225 Pp. Illus. .... Orig. \$9.50

**ENGINEERING DATA PROCESSING SYSTEM DESIGN** By Arthur D. Even, Ph.D., Management Consultant.

Catalog No. MS01 ..... 282 Pp. Illus. .... Orig. \$8.50

**PRINCIPLES OF MODERN ACOUSTICS** By George W. Swenson, Ph.D., National Radio Astronomy Observatory.

Catalog No. MS03 ..... 222 Pp. Illus. .... Orig. \$6.00

**INTRODUCTION TO NEUTRON PHYSICS** By L. F. Curtiss, Ph.D., Consultant to Director of Standards.

Catalog No. NS09 ..... 380 Pp. Illus. .... Orig. \$10.75

**ORDER NOW WHILE THIS BROCHURE IS IN YOUR HANDS**

**All Books Only \$3.95 Each**

#### ORDER FORM

☐ Please send the circled books (show quantity if more than one each).

☐ Remittance Enclosed \$..... ☐ Send Bill

**SAVE HANDLING & POSTAGE ON PREPAID ORDERS**  
**30 Days' Return Privilege on Prepaid or Unpaid Orders**

Name..... Date.....

Address .....

City..... State..... Zip.....

Employer..... Title.....

☐ I want to receive list of Bi-monthly Book Bargains.  
Enclosed \$1 cash for your cost of mailings.

#### M.I.T. RAD. LAB. SERIES Volume Numbers

1 2 3 4 5 6 7 8 9 10  
11 12 13 14 15 16 17 18  
19 20 21 22 23 24 25 26  
27 28

#### CATALOG NUMBERS

AS02 EM01 EM02 EM03  
EM04 EM05 EM06 EM07  
EM09 EM11 EM12 EM14  
EM18 EM25 MS01 MS03  
NS09

**All books \$3.95 each**

Except

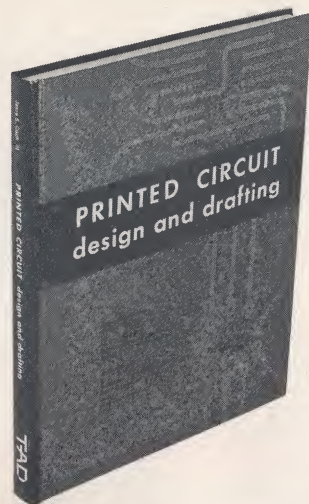
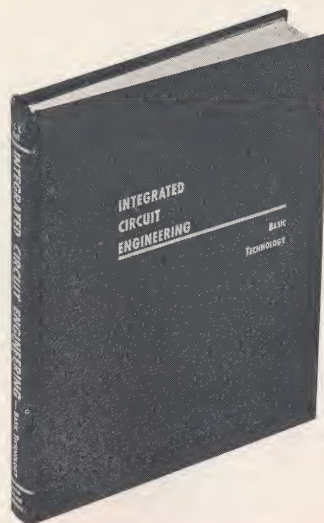
IC01 IC02 EM17 EM31

*"Nearly everything that is now known was not in any book when most of us went to school; we cannot know it unless we have picked it up since."*

**J. Robert Oppenheimer**  
**Institute for Advanced Study at Princeton**

*Before your technical know-how is outdated, update it*





**NEED TO KNOW ABOUT ADVANCES . . .**

## **. . . In Integrated Circuits?**

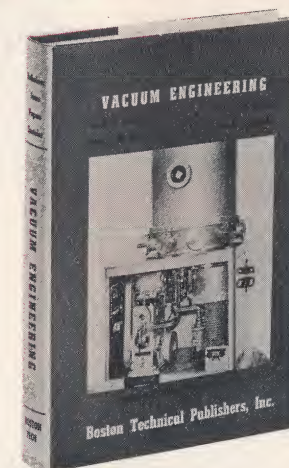
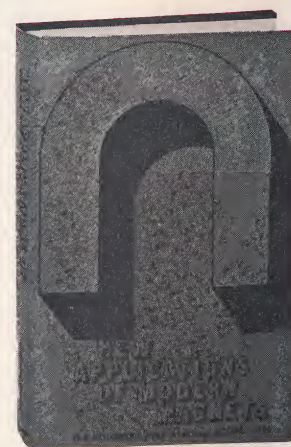
### **INTEGRATED CIRCUIT ENGINEERING**

By Glen R. Madland, Dr. Robert L. Pritchard, Howard K. Dicken, Frank H. Bower, Robert D. Richardson, David B. Kret, and the Staff of Integrated Circuit Engineering Corporation

**CONTENTS:** The Economic Impact of Integrated Circuits; The Basic Materials and Processes of Microcircuits; Photolithography; Silicon Wafer Processing; Process Control; Thin Film Process; Integrated Circuit Assembly; Testing Completed Integrated Circuits; Basic Integrated Design Considerations; The Mathematics of Integrated Circuit Design; Digital Integrated Circuits; Linear Integrated Circuits; Implementing Integrated Circuit Systems; Tolerances; Photo-mask Design and Layout; Specifications for Integrated Circuits; General Reliability Consideration; Reliability Specifications; Failure Analysis; Future Capabilities.

*"Encyclopedic guide to microelectronics . . ."*

**ELECTRO-TECHNOLOGY, August 1966**



## **. . . In Magnets?**

### **NEW APPLICATIONS OF MODERN MAGNETS**

By G. R. Polgreen

The electronic industry can attribute much of its rapid growth to magnets — a key component in telephone receivers, loudspeakers, meters, instruments, tape recorders, radar, computers and various scientific apparatus. If you design any device, mechanism, equipment or system based on magnets, you will find Polgreen's **NEW APPLICATIONS OF MODERN MAGNETS** a sourcebook of application ideas. Starting with the historical development of materials and magnets, the author takes you through their applications from small rotors to cheap kilocycle power. Even a small improvement in any of your designs will be worth more than the price of this book.



*"The book is intended to keep the working engineer, purchasing agent and company president informed . . ."*

**ELECTRONICS (McGraw-Hill), September 1966**

*"A comprehensive Survey . . . Exceptionally clear flowcharts, equipment photographs and circuit diagrams . . ."*

**NEW TECHNICAL BOOKS  
(New York Public Library), October 1966**

*"Detailed information and technical data are given for all aspects, from basic materials and processes to reliability considerations, specifications and failure analyses — including digital and linear circuits — and discussion of future capabilities . . ."*

**SPECTRUM (IEEE), October 1966**

*"Occasionally (such a) book is published . . . Concisely written, yet comprehensive . . . Can be thoroughly recommended . . ."*

*"For all electronics manufacturers today, ignoring integrated circuits is equivalent to going out of business, and this work should be of immense value . . . It is well worth a detailed study."*

**JOURNAL OF INST. OF ELEC. ENGINEERS, October 1966**

*" . . . The most comprehensive of its kind . . ."*

**MICROELECTRONICS DIGEST, 1966**

**Published July, 1966**

**Hardbound, 8½" x 11"**

**405 pp. Illus.**

**Price \$22.50**

Circle Catalog No. IC01 on ORDER FORM

## **. . . In Printed Circuits?**

### **PRINTED CIRCUIT DESIGN AND DRAFTING**

**By Jesse S. Cook, United Aircraft Corp.**

You can design printed circuits. This programmed text of self-instruction brings you the most recent advances in the field and teaches you the art of designing printed circuit boards. An excellent "how-to-do-it" book for the alert draftsman or engineer.

**CONTENTS** — How is a PC Board Made? Reading a Schematic; PC Board Layout: The Sketch; PC Board Layout: Final Considerations; PC Board Drafting: The Master Pattern; PC Board Drafting: The Master Drawing; List of Illustrations; List of Tables.

**Published September 1967**

**Hardbound 8" x 10"**

**214 Pp. Illus.**

**\$15.00**

Circle Catalog No. 1C02 on Order Form

**CONTENTS** — Magnetic Materials: The Importance of New Materials, Electro-magnetism, Historical Survey, Theoretical Background, Powders and Micropowders, Ferrites; New Applications: Modern Magnets in Practice, New Designs, Rotating Machines, Magnetic Suspensions and Linear Propulsions, Future Prospects.

**First U.S. Edition March 1968**

**Hardbound, 6" x 9"**

**330 Pp. Illus.**

**\$14.50**

Circle Catalog No. EM31 on Order Form

## **. . . In Vacuum Technology?**

### **VACUUM ENGINEERING**

**By David H. Holkeboer, Donald W. Jones, Frank Pagano and Donald J. Santeler, Aero Vac Corp.**

The study of vacuum effects on materials, components or systems has grown into a distinct technology. As the utilization of vacuum technology has increased, so has the need for an authoritative technical book which allows an engineer or scientist to probe the field in depth, or furnishes the technician with information on equipment characteristics and practical vacuum techniques. **VACUUM ENGINEERING** fills this information gap and presents the state-of-the-art.

**CONTENTS:** Vacuum Nomenclature, Pressure, Pressure Measurement, Pumping Speed, Gas Flow in Components and Systems, Pumping Systems, Cryogenic Pumping, Gas Load, Outgassing of Materials, Systems, Leak Detection, Author References, Subject Index.

**Published May 1967**

**Hardbound 5½" x 8"**

**324 pp Illus.**

**\$9.50**

Circle Catalog No. EM17 on Order Form

#### **BUSINESS REPLY MAIL**

No Postage Stamp Necessary If Mailed in The United States

— POSTAGE WILL BE PAID BY —

**BOSTON TECHNICAL PUBLISHERS, INC.**

**Central Square, Box 111**

**Cambridge, Massachusetts 02139**

**FIRST CLASS**

**PERMIT No.**

**36932**

**BOSTON, MASS.**





The  
No-Load  
Mutual Fund  
That  
Invests in Companies  
Like Yours!

see other side for details

FIRST CLASS  
PERMIT NO.  
36932  
BOSTON, MASS.

**BUSINESS REPLY MAIL**

No postage stamp necessary if mailed in the United States

postage will be paid by

**BOSTON TECHNICAL CONSULTANTS, INC.  
CENTRAL SQUARE, BOX 111  
CAMBRIDGE, MASSACHUSETTS 02139**





No Sales Charge.  
No Loading Charge.  
No Redemption Charge.

100% of your money invested for long-term growth possibilities in

- |                   |                        |
|-------------------|------------------------|
| ★ electronics     | ★ aerospace            |
| ★ data processing | ★ oil and gas          |
| ★ communications  | ★ electric utilities   |
| ★ transportation  | ★ nuclear energy, etc. |

NOW, our new lower minimums permit you to set up a voluntary (not contractual) Periodic Purchase Plan with a minimum of \$25 . . . on a monthly or quarterly basis after initial investment of \$100.

#### SELF-EMPLOYED RETIREMENT PLANS

Energy Fund is a qualified investment under Keogh Act

MAIL THIS POSTAGE-FREE CARD TODAY FOR  
FREE PROSPECTUS AND FULL INFORMATION.  
NO SALESMAN WILL CALL.

Please send me FREE prospectus and literature on Energy Fund.

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

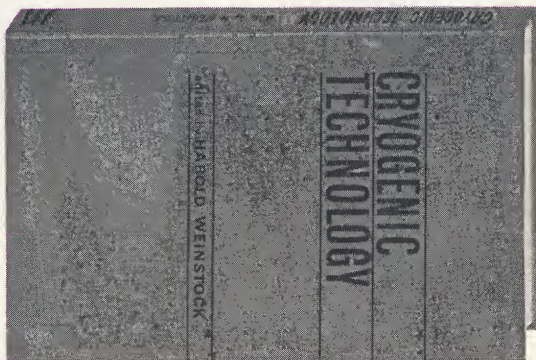
CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_

# Progress in the 60's in CRYOGENIC TECHNOLOGY

## CRYOGENIC TECHNOLOGY

edited by Prof. HAROLD WEINSTOCK, Physics Dept., I.I.T.

From CRYO-67 comes a collection of papers delivered at the seminar sponsored by Illinois Institute of Technology and held in Chicago in June 1967. Here you'll read about new developments in liquefaction of helium, design criteria for insulated



### ORDER FORM

Please send me \_\_\_\_\_ copy(s) of **CRYOGENIC TECHNOLOGY**—Catalog No. EM 36

—Price \$18.50

Remittance Enclosed \$\_\_\_\_\_ Send Bill\_\_\_\_\_

**Save handling and postage on prepaid orders.  
30 days' return privilege on prepaid or unpaid orders.**

Name\_\_\_\_\_ Date\_\_\_\_\_

Address\_\_\_\_\_

City\_\_\_\_\_ State\_\_\_\_\_ Zip\_\_\_\_\_

Employer\_\_\_\_\_ Title\_\_\_\_\_

☐ I want to receive list of Bi-monthly Book Bargains. Enclosed \$1 cash for your cost of mailings.



cryogenic containers, improved low-temperature bearing seal and lubrication methods, superconductivity, magnetohydrodynamics and solutions embodied in electronic and large scale industrial applications. For the engineer who wants a basic understanding of thermometry and measurement of temperatures approaching absolute zero, there's good tutorial material; for the researcher and design innovator there's important state-of-the-art information in **CRYOGENIC TECHNOLOGY**.

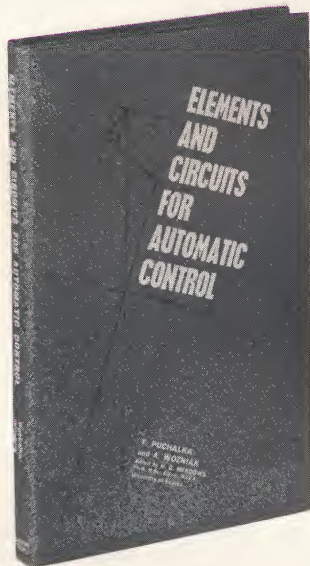
CONTENTS: Early History and Development of Cryogenics, Cryogenic Thermometry and Very Low Temperatures, Production of Liquid Helium and Helium Refrigeration, 1.8° to 20° K, Cryostat Design, Storage and Handling of Liquid Helium, Production and Measurement of Very Low Temperatures, Large Scale Industrial Applications of Cryogenics, Cryogenic Applications in Electronics, Superconductivity State of the Art for Power Applications.

Available October 1968  
7" x 10"

212 pp.  
\$18.50

Catalog Number EM36

Boston Technical Publishers, 639 Mass. Ave., Cambridge, Mass. 02139. (617) 492-7600



## ELEMENTS AND CIRCUITS FOR AUTOMATIC CONTROL

T. Puchalka and A. Wozniak

Breaking down a complex circuit into its basic elements simplifies its study. **ELEMENTS AND CIRCUITS FOR AUTOMATIC CONTROL** gives examples of typical elements of control systems and discusses their

see other side →

### ORDER FORM

Please send me \_\_\_\_\_ copy(s) of **ELEMENTS AND CIRCUITS FOR AUTOMATIC CONTROL**—Catalog No. EM 35—Price \$14.50

Remittance Enclosed \$ \_\_\_\_\_ Send Bill \_\_\_\_\_

Save handling and postage on prepaid orders.  
30 days' return privilege on prepaid or unpaid orders.

Name \_\_\_\_\_ Date \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
Employer \_\_\_\_\_ Title \_\_\_\_\_

☐ I want to receive list of Bi-monthly Book Bargains. Enclosed \$1 cash for your cost of mailings.

EM 10/68

FIRST CLASS  
PERMIT NO.  
36932  
BOSTON, MASS.

### BUSINESS REPLY MAIL

No postage stamp necessary if mailed in the United States

postage will be paid by

BOSTON TECHNICAL PUBLISHERS, INC.  
CENTRAL SQUARE, BOX 111  
CAMBRIDGE, MASSACHUSETTS 02139

systems applications. An introduction to the fundamentals of control theory precedes a discussion on the dynamic behavior of electrical circuits and machines as elements in control loops, together with various aspects of non-linear behavior. The following chapter deals with selected elements of electrical control systems classified on the basis of single-loop diagrams. Discussions on stability criteria, stability synthesis and general dynamic analysis of selected systems are also included. Both the full-fledged engineer and the engineering student will find this a valuable book for his library.



Contents — Basic Concepts in the Theory of Control, Dynamic Analysis of Electrical Circuits, Dynamic Analysis of the Electrical Elements of Control Systems, Stability Analysis and Synthesis and General Dynamic Analysis of Electrical Control Systems.

5 1/2 x 8

217 Pp.

1968

\$14.50

FIRST CLASS  
PERMIT NO.

36932

BOSTON, MASS.

## BUSINESS REPLY MAIL

No postage stamp necessary if mailed in the United States

postage will be paid by

BOSTON TECHNICAL PUBLISHERS, INC.

CENTRAL SQUARE, BOX 111

CAMBRIDGE, MASSACHUSETTS 02139



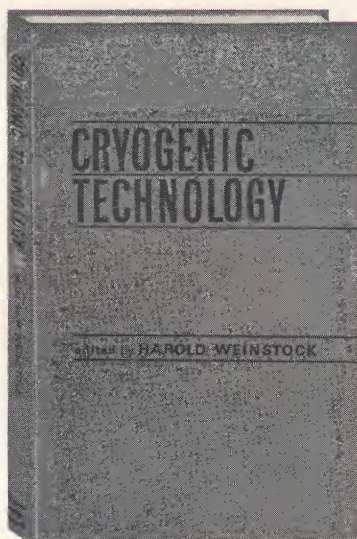
systems applications. An introduction to the fundamentals of control theory precedes a discussion on the dynamic behavior of electrical circuits and machines as elements in control loops, together with various aspects of non-linear behavior. The following chapter deals with selected elements of electrical control systems classified on the basis of single-loop diagrams. Discussions on stability criteria, stability synthesis and general dynamic analysis of selected systems are also included. Both the full-fledged engineer and the engineering student will find this a valuable book for his library.

Contents — Basic Concepts in the Theory of Control, Dynamic Analysis of Electrical Circuits, Dynamic Analysis of the Electrical Elements of Control Systems, Stability Analysis and Synthesis and General Dynamic Analysis of Electrical Control Systems.

5 1/2 x 8                      217 Pp.                      1968  
\$14.50

Boston Technial Publishers, 639 Mass. Ave., Cambridge, Mass. 02139. (617) 492-7600

## Progress in the 60's in CRYOGENIC TECHNOLOGY



### CRYOGENIC TECHNOLOGY

edited by Prof. HAROLD WEINSTOCK, Physics Dept., I.I.T.

From CRYO-67 comes a collection of papers delivered at the seminar sponsored by Illinois Institute of Technology and held in Chicago in June 1967. Here you'll read about new developments in liquefaction of helium, design criteria for insulated

continued →

FIRST CLASS  
PERMIT NO.  
36932  
BOSTON, MASS.

### BUSINESS REPLY MAIL

No postage stamp necessary if mailed in the United States

postage will be paid by

BOSTON TECHNICAL PUBLISHERS, INC.  
CENTRAL SQUARE, BOX 111  
CAMBRIDGE, MASSACHUSETTS 02139

### ORDER FORM

Please send me \_\_\_\_\_ copy(s) of CRYOGENIC TECHNOLOGY—Catalog No. EM 36

—Price \$18.50

Remittance Enclosed \$ \_\_\_\_\_

Send Bill \_\_\_\_\_

Save handling and postage on prepaid orders.  
30 days' return privilege on prepaid or unpaid orders.

Name \_\_\_\_\_ Date \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

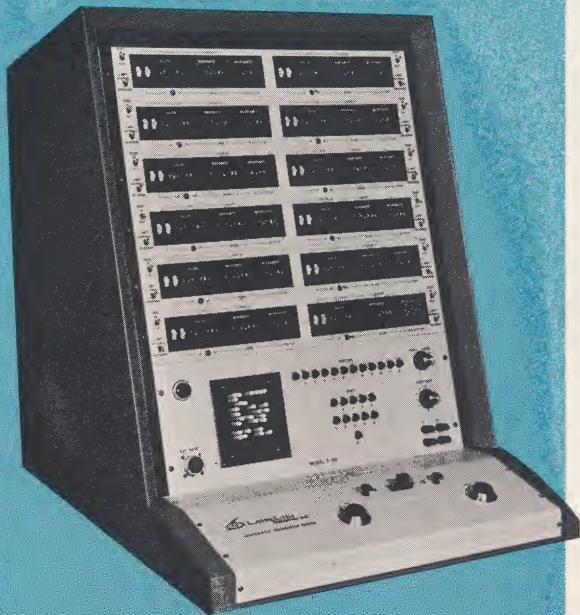
Employer \_\_\_\_\_ Title \_\_\_\_\_

☐ I want to receive list of BI-monthly Book Bargains. Enclosed \$1 cash for your cost of mailings.

EM 10/68

## APPLICATIONS

This instrument is used for high volume testing of small signal and medium power transistors and diodes. Final test and in-process testing are typical applications. It is economical enough to be used in incoming inspection departments of large equipment manufacturers where 100% inspection is desired. The tester will readily interface with any input and output mechanical handling equipment. Auxilliary equipment is available to multiplex the tester with either operators or slice probers.



Model T12A with 12 Tests and 1 Sorts

## AUTOMATIC TRANSISTOR TESTER

 **LORLIN**  
industries inc.

## BUSINESS REPLY MAIL

No postage stamp necessary if mailed in the United States

FIRST CLASS  
PERMIT NO.  
36932  
BOSTON, MASS.

Postage will be paid by

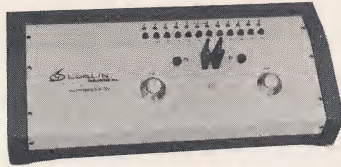
BOSTON TECHNICAL CONSULTANTS, INC.  
CENTRAL SQUARE, BOX 111  
CAMBRIDGE, MASSACHUSETTS 02139





## FEATURES

- CONVENIENCE OF PROGRAMMING
- EASE OF MAINTENANCE
- HIGH RELIABILITY



*Operator Multiplexing Station*

## GENERAL DESCRIPTION

Model TA, essentially a 1% instrument, will perform common DC and pulsed measurements. It will measure Leakage Current as low as 1 nanoampere and DC Beta with collector currents from 10 uamps to 1 amp. Breakdown Voltages are measured to 200 volts and Saturation Voltages down to 10 millivolts. Standard test time is 16 milliseconds.

The tester is completely programmable by front-panel controls. Any of the available tests may be programmed on each of the test modules. The programming switches

are set with the aid of meaningful, clearly-marked panels, and the test definitions and limits are set with thumbwheel switches. Each sort, consisting of any combination of passed tests, is programmed by plugging diode pins into a sort matrix. Under normal conditions, no additional adjustments are necessary to those made in the factory.

Model TA is totally solid state using silicon devices. All test switching is performed by reliable glass reed relays. The entire system is modular using PC boards and plug-in assemblies to ensure complete accessibility to each component.



*Prober Interface Multiplexer Unit*

Gentlemen,

We would like to:

- ☐ Arrange for a demonstration at our company.
- ☐ Make an appointment with a sales engineer.
- ☐ Just have additional information for our files.

Name \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_  
Company \_\_\_\_\_ Dept. \_\_\_\_\_ Phone \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

EM 10/68

instruments. This book begins with a discussion of the basic physics of materials and indicates the parameters which determine electrical and physical properties. The author discusses in detail ceramics, plastics, liquid insulators, gases, composite dielectrics, conductors, magnetic materials, ferrites and semiconductors, their structure, manufacture, properties and applications, and presents a brief outline of solid-state physics. Inclusion of numerous tables of physical and mechanical properties adds to the book's usefulness. For the student this book is a valuable introduction to the study of materials; for the engineer and researcher in industry it is an invaluable reference tool.

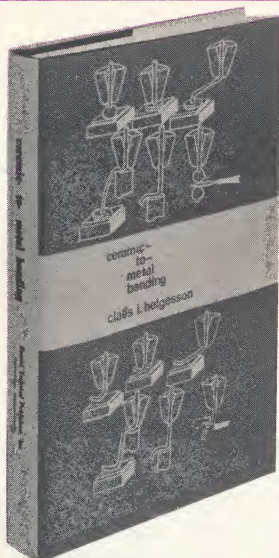


CONTENTS: Electromagnetic Parameters of Materials; Fundamental Ideas on the Structure of Materials; Dielectrics: Electrical Properties, Physical, Mechanical and Chemical Properties, Organic, Inorganic; Conductors, Semiconductors and Magnetic Materials: Metallic Conductors, Semiconductors, Magnetic Materials.

First U. S. Edition, April 1968.  
Hardbound 6" x 8½"

342 pp., illus.  
\$17.50

Boston Technical Publishers, 639 Mass. Ave., Cambridge, Mass. 02139 (617) 492-7600



## CERAMIC-TO-METAL BONDING

By Claes I. Helgesson

To make maximum use of the best properties of combined ceramics to metals materials necessitates a good bonding between the materials. This book discusses the various methods and mechanisms used to bond a variety of ceramics to metals, including dispersion strengthened metals, metal fiber reinforced ceramics, ceramic fiber reinforced metals, cermets, ceramic coatings on metals and metal coatings on ceramics, and gives the test results of an examination of these bonds. A review of the state-of-the-art for the engineer who needs to know.

FIRST CLASS  
PERMIT NO.  
36932  
BOSTON, MASS.

### BUSINESS REPLY MAIL

No postage stamp necessary if mailed in the United States

postage will be paid by

BOSTON TECHNICAL PUBLISHERS, INC.  
CENTRAL SQUARE, BOX 111  
CAMBRIDGE, MASSACHUSETTS 02139

### ORDER FORM

Please send me \_\_\_\_\_ copy(s) of CERAMIC-TO-METAL BONDING

—Catalog No. EM32—Price \$14.50

Remittance Enclosed \$ \_\_\_\_\_ Send Bill \_\_\_\_\_

Save handling and postage on prepaid orders

30 days' return privilege on prepaid or unpaid orders

NAME \_\_\_\_\_ DATE \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_  
EMPLOYER \_\_\_\_\_ TITLE \_\_\_\_\_

☐ I want to receive list of Bi-monthly Book Bargains. Enclosed \$1 cash for your cost of mailings.

E 110/68

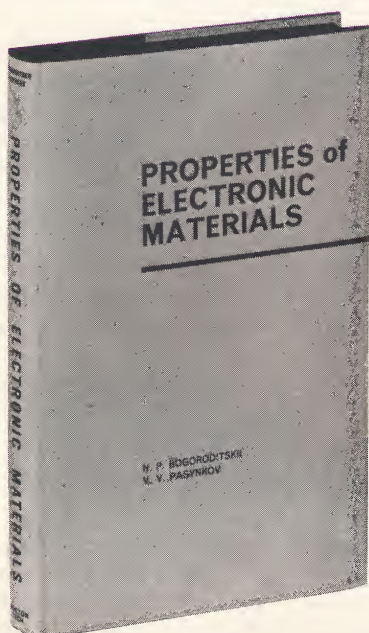


CONTENTS: Literature Review: Review of technically used methods to achieve bonding of metals to ceramic materials, Bonding mechanism for ceramic-to-metal seals; Experimental technique: Furnaces, Adherence test, Specimen preparation and microscopy, Electron probe micro analysis, Electron microscopy, X-ray diffractometry; Thermodynamic calculations: Experimental: Metallizing of ceramic materials, Synthesized reactions between different metallizing components and ceramic materials, X-ray diffraction studies, Electron probe. micro-analysis, Electron microscopy; Reactions between different components of the metallizing mixtures, Metallizing with heavy metals, Metallizing with metallizing mixtures based on  $\text{MoO}_3$ , Metallizing with Mo-Mn-mixtures, Ceramic-to-metal seals with active metals, Ceramic-to-metal seals with beryllia ceramics; Appendix 1: Quantitative analysis with the aid of the electron probe X-ray microanalyzer, Appendix 2: Correction calculation of data from the electron probe micro analyzer, Appendix 3: The resolution of the electron probe microanalysis, Appendix 4: Wavelength-shift of the excited radiation from an electron probe micro analyzer upon valency change of the excited element; Ceramic-to-Metal Seals of Heavy Metals Type to Beryllia Ceramics.

First U. S. Edition April 1968  
Hardbound 6" x 9"

122 pp., Illus.  
\$14.50

Boston Technical Publishers, 639 Mass. Ave., Cambridge, Mass. 02139 (617) 492-7600



## PROPERTIES OF ELECTRONIC MATERIALS

N. P. Bogoroditskii and V. V. Pasyukov

For proper material application in your design problem you need to know all about the physical, electrical, mechanical and chemical properties of the material you use in your electronic devices and

*continued* →

FIRST CLASS  
PERMIT NO.  
36932  
BOSTON, MASS.

## BUSINESS REPLY MAIL

No postage stamp necessary if mailed in the United States

postage will be paid by

BOSTON TECHNICAL PUBLISHERS, INC.  
CENTRAL SQUARE, BOX 111  
CAMBRIDGE, MASSACHUSETTS 02139

## ORDER FORM

Please send me \_\_\_\_\_ copy(s) of **PROPERTIES OF ELECTRONIC MATERIALS**  
—Catalog No. EM 33—Price \$17.50

Remittance Enclosed \$ \_\_\_\_\_ Send Bill \_\_\_\_\_

Save handling and postage on prepaid orders.

30 days' return privilege on prepaid or unpaid orders.

Name \_\_\_\_\_ Date \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Employer \_\_\_\_\_ Title \_\_\_\_\_

☐ I want to receive list of Bi-monthly Book Bargains. Enclosed \$1 cash for your cost of mailings.

E 10/68

Monitor Temperature with VirTronic THERMISTOR TEMPERATURE INDICATORS in the following standard ranges and with the standard probes. Special ranges and probes are available on request.

RANGES	°C		°F
	A	B	C
A	-80 to +10	-112 to +50	
B	-60 to +30	-70 to +86	
C	-10 to +50	+14 to +122	
D	0 to 100	32 to 212	
E	50 to 150	120 to 300	
EE	10 to 150	50 to 300	

PROBES	TYPE	DIMENSIONS	PRICE
50-1	Teflon Covered	1/8" Dia x 3" Long	\$12.50
50-2	Stainless Steel	1/8" Dia x 2" Long	\$12.50
50-3	Stainless Steel	1/8" Dia x 4" Long	\$24.50
50-4	Spade Connector	No. 6 Standard Size	\$11.50
50-5	Epoxy Coated	1/8" Dia x 1/2" Long	\$10.50

THE VIRTris COMPANY, INC.

GARDINER, N. Y. 12525 • Area Code 914 255-5000

FIRST CLASS  
PERMIT NO.  
36932  
BOSTON, MASS.

## BUSINESS REPLY MAIL

No postage stamp necessary if mailed in the United States

postage will be paid by

BOSTON TECHNICAL CONSULTANTS, INC.  
CENTRAL SQUARE, BOX 111  
CAMBRIDGE, MASSACHUSETTS 02139





- ☐ Send catalog on instruments, probes, and ranges.
- ☐ I would like to receive a  
Model \_\_\_\_\_  
Range \_\_\_\_\_  
for a two week evaluation.
- ☐ Please have an applications engineer call.  
Phone \_\_\_\_\_
- ☐ Please send OEM quantity prices on  
Model 51-AC.

My interest is for:

- ☐ Immediate application
- ☐ Anticipated application
- ☐ Information only

Name \_\_\_\_\_

Title \_\_\_\_\_

Company \_\_\_\_\_

Dept./Mail Station \_\_\_\_\_

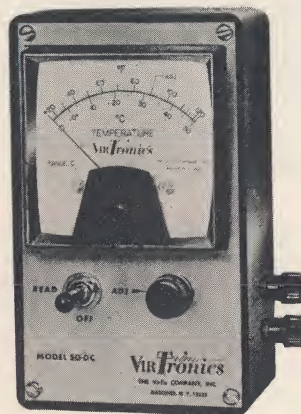
Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

EM 10/68

# THERMISTOR TEMPERATURE INDICATORS

- Low Cost
- Remote Sensing
- Multiple Point Indication



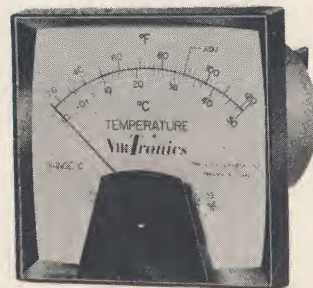
**\$49.00**

**Model 50-DC**

**Portable Battery Operated**

Ideal for laboratory use where a hand held instrument is convenient.

- Interchangeable probes with fast response
- Measures temperature of Liquids, Surfaces & Gases



**\$64.50**

**Model 51-AC**

**Panel-Mount Line Operated**

Mount the indicator in your instrument panel and use any number of probes up to 300 ft. away. A common rotary switch can be used for multiple probe installations.

**VIRTronics**

**New Edition**  
**ENCYCLOPAEDIA BRITANNICA**



*At no extra cost*

**A CHOICE OF OPTION NO. 1**



the  
15-volume  
set of  
**BRITANNICA  
JUNIOR**



**Webster's Third  
New International  
Dictionary  
Unabridged**  
with Seven-Language Dictionary

the complete, unabridged  
**BRITANNICA  
WORLD ATLAS**



**OR OPTION  
NO. 2**

**Encyclopaedia  
Britannica  
World Globe**



Dear Customer:

We are pleased to announce that we have just completed arrangements with Encyclopaedia Britannica which will enable to you obtain the latest Heirloom Edition **AT A REDUCED PRICE . . . A PRICE THAT IS SUBSTANTIALLY LOWER THAN THAT WHICH IS AVAILABLE TO ANY INDIVIDUAL.** And you have your choice of additional Britannica merchandise at no extra cost through Britannica's Group Discount Plan.

These extras from which you may choose, include such items as the 15-volume Britannica Junior Encyclopaedia, designed especially for boys and girls, or Webster's Third New International Dictionary, the Britannica Atlas and the Britannica World Globe. A beautiful walnut veneered bookcase is also available among this selection. In addition, you have a choice of Home Study Guides which cover subjects that range from history and literature to child care and home decoration, together with the Britannica Library Research Service, which allows you to receive up to 100 research reports on almost any subject of your choice. And you can receive all this free of extra cost . . . together with the reduced price on the 24-volume Heirloom Edition. **A PRICE AVAILABLE ONLY UNDER THIS PLAN.**

In addition to this, along with this reduced price, Encyclopaedia Britannica is also extending its own "book club" plan with an important difference. It is called the Book a Month Payment Plan. You receive all 24 volumes at once, yet pay for just one book each month.

**No cost or obligation**

**MAIL  
COUPON NOW  
FOR FREE  
BOOKLET**



EM 10/68

**DON'T MISS OUT on this GREAT OPPORTUNITY**  
to take advantage of this group discount on  
**ENCYCLOPAEDIA BRITANNICA** for our customers.

Gentlemen: Please let me have the colorful Preview Booklet which pictures and describes the latest edition of Encyclopaedia Britannica and complete information of the Britannica Group Discount Plan featuring a reduced price, additional materials at no extra cost and the Britannica Book a Month Payment Plan. No obligation.

NAME .....  
ADDRESS .....  
CITY ..... STATE .....  
SIGNATURE ..... ZIP CODE .....

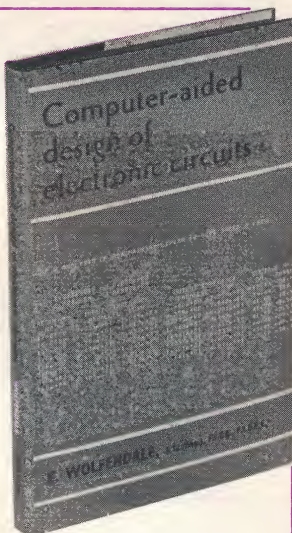
L-Boston Technical Publishers—BO-035-C-Z

**Mail this card today**

# FIRST BOOK ON AN IMPORTANT NEW SUBJECT

## COMPUTER-AIDED DESIGN OF ELECTRONIC CIRCUITS

E. Wolfendale



*An important new technique*

- increases reliability;
- increases efficiency by avoiding duplication of effort;
- reduces time between conception and production;
- eliminates production problems by tolerancing the design in development;
- results in agreement between theory and practice.

### ORDER FORM

Please send me \_\_\_\_\_ copy(s) of **COMPUTER-AIDED DESIGN OF ELECTRONIC CIRCUITS**—Catalog No. EM 34—Price \$18.50

Remittance Enclosed \$ \_\_\_\_\_ Send Bill \_\_\_\_\_

Name \_\_\_\_\_ Date \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
Employer \_\_\_\_\_ Title \_\_\_\_\_

☐ I want to receive list of Bi-monthly Book Bargains. Enclosed \$1 cash for your cost of mailings.

EM 10/68



This book is a general introduction to the use of the computer in design of electronic circuits. Simple examples highlight those computer techniques which can be used for solution of complex electronic problems. If your job requires engineering sophistication, a knowledge of this technique, a design tool of the future, is a must!



CONTENTS: Introduction to the Computer and Methods of Programming, Methods of Producing Design Tables, Use of the Computer for Complex Analysis, Design Program for a Three-stage Video Amplifier, Use of a General Circuit Analysis Program as an Aid to Design, Iterative Approach to Network Analysis involving Complex Waveforms, Non-linear Analysis, Design Involving Feedback and Circuit Simulation.

Published 1968


442 pp. Illus.

8 3/4" x 5 1/2"

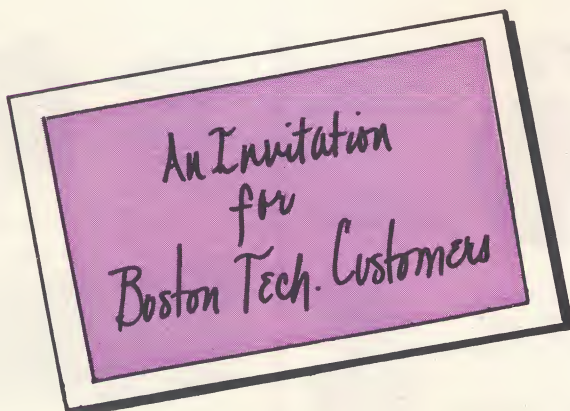
\$18.50

Catalog Number EM34

Boston Technical Publishers, 639 Mass. Ave., Cambridge, Mass. 02139. (617) 492-7600

ENCYCLOPAEDIA  BRITANNICA  
is happy to announce along with its  
200TH ANNIVERSARY CELEBRATION  
a just-for-you discount price arranged by

BOSTON TECHNICAL PUBLISHERS, INC.



FIRST CLASS  
PERMIT NO.  
36932  
BOSTON, MASS.

## BUSINESS REPLY MAIL

No postage stamp necessary if mailed in the United States

postage will be paid by

BOSTON TECHNICAL PUBLISHERS, INC.  
CENTRAL SQUARE, BOX 111  
CAMBRIDGE, MASSACHUSETTS 02139

FIRST CLASS  
PERMIT NO.  
36932  
BOSTON, MASS.

## BUSINESS REPLY MAIL

No postage stamp necessary if mailed in the United States

postage will be paid by

BOSTON TECHNICAL PUBLISHERS, INC.  
CENTRAL SQUARE, BOX 111  
CAMBRIDGE, MASSACHUSETTS 02139



NAME..... TITLE.....  
 FIRM NAME.....  
 ADDRESS.....  
 CITY..... STATE..... ZIP CODE.....

**FILL OUT AND MAIL TODAY!**

CHECK  
HERE

☐ PEER LINDSTROM HAND TOOL CATALOG  
☐ LORCH INSTRUMENT LATHES CATALOG

**FREE!**

PLACE  
YOUR  
ORDER  
HERE

ORDER HERE	NO.	DESCRIPTION	PRICE
	36-721	23 PIECE SET	\$32.00
	36-304	12 PIECE SET	\$19.95

CHECK HERE

☐ Payment Enclosed  
☐ Bill My Company  
 (Kits) F.O.B.  
 New York

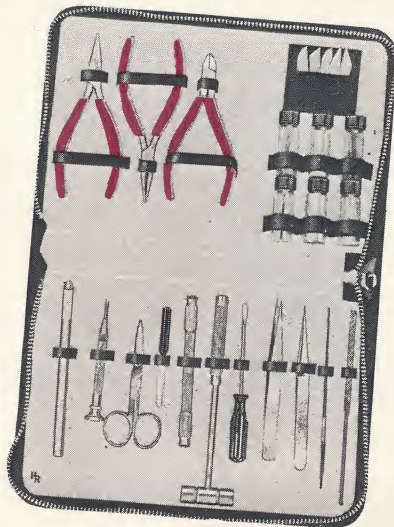
## PEER TECHNICIANS KIT

Here is an all purpose tool kit, which has thousands of uses when working on miniature projects!

Over 23 different high quality tools for gripping, cutting, bending, drilling, tapping, filing, broaching and many other uses.

All the Peer professional quality tools have a place in the handsome zipper case made of durable black Colonial grain imitation leather, lined with velvet-like material. Convenient size — fits into desk or bench drawer.

No.	Description	Price
36-721	23 Piece Set	\$32.00



### CONTENTS:

- 4 1/2" Chain Nose Pliers
- 4 1/2" Round Nose Pliers
- 4 1/2" Diagonal Nippers
- Knife with 5 Blades
- Jewelers Screwdriver with 3 Blades
- 3 1/4" Metal Cutting Scissors
- Metal Point Oiler
- Double-End Pin Vise
- Brass Head Mallet
- 3" Electrician's Screwdriver
- 5" Tweezers with Sharp Points
- 5" Self-locking Tweezer
- 5-Cornered Cutting Broach
- 5" Needle File
- Miniature Tap
- Drill Bit to Match Tap
- 6 Glass Vials

## SERVICE MASTER

A versatile 12-piece set of quality tools for assembly and service work. Packed in durable vinyl plastic case, which can be hung, or rolled up.

The pliers and nippers are Lindstrom Swedish brand, while the Peer interchangeable handle and screwdrivers and nutdriver blades are made in the U.S.A.

No.	Description	Price
36-304	12 Piece Set	\$19.95

### CONTENTS:

- 5" Diagonal Nippers
- 5 1/2" Long Nose Chain Pliers
- 5" Multi-grip Pliers
- Interchangeable Handle
- 2 Slotted Screwdrivers
- 2 Phillips Screwdrivers
- 4 Nutdrivers







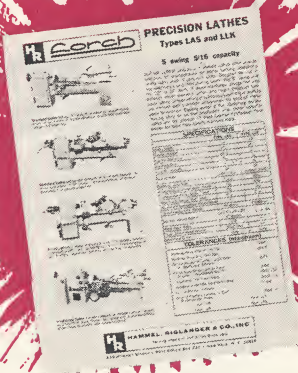
## CATALOG OF HAND TOOLS

For Miniature and Micro-Miniature  
Applications

Pliers, tweezers, scissors, and many other specialized tools are included in this new catalog.

A must for those involved in electronics and micro-electronics.

USE THIS CARD TO ORDER YOUR CATALOGS!



## CATALOG OF INSTRUMENT LATHES

The Lorch 5" swing, 5/16" collet capacity, precision lathes offer a wide selection of accessories for metal turning applications. Leadscrew model, as well as models with lever-operated attachments, are available.

Instrument makers, electronic firms, model making shops, and research and development laboratories should be interested in these lathes.

FIRST CLASS  
Permit No. 62429  
New York, N. Y.

**BUSINESS REPLY MAIL**

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

**MINATEC TOOLS**

POST OFFICE BOX 10 • NEW YORK, N. Y. 10014